DOCUMENT RESUME

ED 297 315 CS 009 274

AUTHOR McKeown, Margaret Gentile
TITLE The Acquisition of Word Meaning from Context by Children of High and Low Ability. Outstanding Dissertation Monograph 1985.
INSTITUTION International Reading Association, Newark, Del.
PUB DATE Apr 86
NOTE 37p.; Doctoral Disseration, University of Pittsburgh. Small print and light type in this document may not reproduce well.
PUB TYPE Reports - Research/Technical (143) -- Dissertations/Theses - Doctoral Dissertations (041))

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Ability Grouping; Associative Learning; Classroom Research; *Context Clues; Grade 5; Intermediate Grades; Learning Problems; *Learning Strategies; *Vocabulary Development; *Vocabulary Skills

ABSTRACT

A study proposed a sequenced process for inferring word meaning from context in order to investigate experimentally where, within the process, differences between learners of varying skill occur, and to discover the kinds of information students need in order to acquire vocabulary most effectively. Six five-step tasks, each designed around an artificial word, were administered individually to 30 urban fifth graders, 15 with high vocabulary ability and 15 with low. These tasks were at the level of contexts typically encountered in school reading, thereby yielding a realistic picture of where difficulties in processing ordinarily occur. Scores obtained from each step of the task each represented an aspect of the meaning acquisition process: selection of constraints from context; testing a meaning choice within constraints; use of two contexts to constrain meaning choices; evaluation of a meaning choice given the use of two contexts; use of additional contexts to refine word meaning; identification of word meaning given contexts that contain direct meaning clues; and discrimination between sentences that use and those that misuse the newly learned words. Findings indicated that the low ability group misunderstood the relationship between word and context; that both groups demonstrated a semantic interference when considering two contexts simultaneously; and that the process is a complex one. Teacher modeling of important concepts and strategies may be well-suited to improve children's context skills. (Twenty-eight references are attached.) (SR)

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Outstanding DISSERTATION monograph 1985

The Acquisition of Word Meaning From Context by Children of High and Low Ability

Margaret Gentile McKeown
University of Pittsburgh

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Outstanding DISSERTATION monograph 1985

The Acquisition of Word Meaning From Context by Children of High and Low Ability

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University of Pittsburgh

Dissertation Completed at
University of Pittsburgh
August 1983

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ACKNOWLEDGMENTS

I gratefully acknowledge my advisor, Isabel Beck, for the invaluable advice, guidance, and support she gave throughout the dissertation process, and the members of my committee, Rita Bean, Tony Eichelberger, Steve Koziol, and Chuck Perfetti, for the advice and assistance they offered at various stages of this study.

I also acknowledge the fifth graders at Kelly School for their cheerful cooperation, and their teachers for their gracious acceptance of my invasions to their classrooms.

I offer special thanks to several people who took the time to help me with various specific problems along the way: Gaea Leinhardt, Rick Omanson, and Charles Stegman.

Further, I am indebted to Jay Ritter for her considerable word processing skills, her patience with numerous revisions, and her constant good cheer.

Finally, I acknowledge the role of my husband, David, whose loving support was my strength and motivation.

M.G.M.

INTRODUCTION

This monograph, Margaret McKeown's award-winning doctoral dissertation, is the second monograph of this series. In order to understand the significance of this monograph series, I would like to share with you some of the history connected with the selection of the Outstanding Dissertation by the Subcommittee on the Research Award.

As a professional organization, the International Reading Association has tried to encourage and reward high-quality doctoral research in reading by recognizing those dissertations which are outstanding. Each year, a call goes out encouraging those who have completed graduate work in reading to submit a dissertation monograph. The Subcommittee reads, rereads, and ranks each submission. As a result of this process, the 10 highest ranking dissertation monographs are nominated as IRA award-winning doctoral research. Traditionally, each of the 10 persons so honored is invited to the IRA Annual Convention to present his/her research and to share deserved recognition.

Although reading is common to all the dissertations, many different methodologies and topics are represented. Some of the dissertations are experimental, some ethnographic, and some are historical. To complicate matters even more, some are on beginning and others are on fluent stages of reading, and some examine special populations such as the learning disabled. If this were not enough of a problem, the members of the Subcommittee are chosen to represent a variety of viewpoints and approaches to reading. These problems make the selection of one outstanding dissertation from the many received a difficult though professionally rewarding achievement for the Subcommittee. Despite the problems, the one dissertation with the highest ranking is selected to receive the Outstanding Dissertation of the Year Award.

In addition to recognizing the work of outstanding young researchers, a secondary, though equally important, goal to this competition has been to encourage publication of quality reading research. The Subcommittee, under my tenure, devised the dissertation monograph system. Each person who competes for this Award now writes a research paper of about 30-40

pages, based on the thesis and in such style and quality that it can be sent to a scholarly journal to be reviewed for possible publication. This system has four major advantages. First, applicants can present a fully developed version of their dissertation research for review. Second, young researchers who may not get an opportunity to put their dissertation in publishable style are doing so. Third, expense for applicants and time for reviewers have been reduced. And, fourth, the International Reading Association is able to establish an Outstanding Dissertation Monograph series as a direct result of this system.

Of all the papers which our Subcommittee received for the 1984-1985 competition, Margaret Gentile McKeown's received the highest ranking. As you read her monograph, I think you will be impressed, as we were, with its high quality and the contribution it makes to the field of reading.

S. Jay Samuels
Chair
Subcommittee on the Research Award
1985

THE PROBLEM

Research on vocabulary, which can be described as research that bears directly or indirectly on the improvement of vocabulary knowledge, has a history dating back at least to Thorndike's work in 1917 (Clifford, 1978). Major trends in vocabulary research have included investigations of the relationship between vocabulary knowledge and reading comprehension, the role of context in acquiring word meaning, and the effectiveness of vocabulary instruction. The accumulation of research has shown that fundamental assumptions underlying each of these trends is highly conditional. That is, the notions that vocabulary knowledge and reading comprehension are related, that context promotes vocabulary learning, and that instruction brings about vocabulary knowledge have been borne out by research, but only under certain conditions.

A current focus of vocabulary research is the investigation of the conditions within which these notions about vocabulary knowledge operate, and what brings about those conditions (see, for example, Carnine, Kameenui, & Coyle, 1984; Freebody & Anderson, 1981a, 1981b; Jenkins, Stein, & Wysocki, 1984; Nagy, Herman, & Anderson, 1985; Sternberg, Powell, & Kaye, 1983). This orientation demonstrates a consideration of cognitive functions that underlie and enable vocabulary learning. Concern with cognitive issues has been reflected in several studies of the effectiveness of vocabulary instruction. Consideration of underlying cognitive processes has been demonstrated implicitly, in the design of the instruction (Draper & Moeller, 1971), explicitly, in the rationale and methodology as well as the instructional design (Beck, Perfetti, & McKeown, 1982; Gipe, 1978-1979; Kameenui, Carnine, & Freschi, 1982; Margosein, Pascarella, & Pflaum, 1982; McKeown, Beck, Omanson, & Perfetti, 1983), and in the discussion of factors contributing to certain results (Jenkins, Pany, & Schreck, 1978; Pany & Jenkins, 1978).

In addition to considering the functioning of cognitive processes in the design of vocabulary instructional studies, processing issues can also be investigated more directly by exploring how learners handle information in vocabulary learning and vocabulary application situations. Such an ap-

proach, was taken, through investigations of acquiring word meaning from context, in Werner and Kaplan's (1952) classic developmental study and in a recent study by van Daalen-Kapteijns and Elshout-Mohr (1981).

Werner and Kaplan's (1952) study sought to describe the various ways children use language in deriving word meaning and the developmental effects on the use of language. In doing so, they focused on problematic aspects of children's use of context by using a purposely abstract, difficult task to determine the stability of levels of performance which they believed could best be discerned under conditions that were conducive to regressive behavior. The purpose of their study was to discover at what point in the process, and to which behaviors, children at various developmental levels regressed when given a difficult task. To gain an appreciation of the nature of the task, consider the following sentences which children were to use to derive the meaning of the artificial word *hudray*, which was given the meaning of "to grow, increase, or expand":

1. You hudray what you know by reading and studying.
2. Mrs. Smith wanted to hudray her family.
3. To hudray the number of children in the class, there must be enough chairs.

Werner and Kaplan's (1952) approach, however, could give a distorted view of the difficulties children have with using context, resulting in a picture of what *can* happen in extreme situations, rather than what is likely to happen when children interact with context to derive word meaning. It seems that the task items Werner and Kaplan presented could exaggerate problems in children's processing, because the difficulty of the task might trap children within their own incorrect responses, making them unable to apply knowledge that is relevant to the task.

The study by van Daalen-Kapteijns and Elshout-Mohr (1981) sought characteristics of an efficient process of word meaning acquisition by studying the responses of (relatively) high and low ability college students to a word meaning acquisition task. The investigators found that both high and low ability groups formed a rough notion, or model, of an unknown word's meaning from initial contexts, but the groups worked to refine the models in different ways. The high ability subjects seemed able to add or delete some component of the word meaning model being developed without adjusting other components. This allowed them to maintain a certain invariance of meaning among different contexts, yet remain flexible enough to revise the word meaning as needed. Low ability subjects, on the other hand, did not seem to view word meanings as a bundle of separable components, but as an indivisible whole. Thus, if some part of the model was shown not to fit, subjects were forced to readjust the entire model or develop a new one to take its place.

The study to be reported here is closely related to those of Werner and Kaplan (1952) and van Daalen-Kapteijns and Elshout-Mohr (1981) in that it was undertaken to investigate differences in the process of acquiring word meaning from context in learners at different levels. The present study differs from the earlier studies in several important ways. Similar to Werner and Kaplan's study, this study explored children's processing, but, unlike the meaning acquisition task in that earlier study, the task presented to children in the present study was designed to be more at the level of contexts children typically encounter in school reading. Werner and Kaplan's task consisted of difficult and abstract items which would not be appropriate to the purpose of drawing conclusions about children's ability to use context. The task developed for this study was designed to allow children to apply the knowledge they have about the meaning acquisition process, and therefore was intended to yield a realistic picture of where difficulties in processing ordinarily occur.

Second, the present study extended the investigation of word meaning acquisition by addressing the question of how well an "acquired" word can be applied in later encounters. The two previous studies did not address the issue of subsequent performance on the words whose meanings the subjects derived. Yet, this is an important issue because gaining information about a word's meaning is of value only if it can be used to understand future encounters with that word.

Third, the focus of the present study differs from those of Werner and Kaplan (1952) and van Daalen-Kapteijns and Elshout-Mohr (1981) in its consideration of instructional issues. A major goal of this study is to shed light on the kind of information that students need in order to acquire vocabulary most effectively. This could then suggest what might be included in instruction to make it optimally effective.

METHOD

Materials

The materials used in this study consisted of an experimenter-created meaning acquisition task containing six items, each designed around an artificial word. Each item consisted of a sequence of sentences containing an artificial word and clues to the word's meaning. The artificial words represented two nouns, two verbs, and two adjectives so that any conclusion drawn from the study would not be limited to a specific category of words. The task was based on a hypothesized view of an effective process of acquiring word meaning from context, which is presented in the next section.

A View of the Meaning Acquisition Process

The view of the meaning acquisition process to be described was developed to serve as a basis for creating a meaning acquisition task. The process has as its goal the discovery of a stable meaning for an unfamiliar word that makes sense in, and illuminates the meaning of, the contexts in which the word appears. No claim is made that the view of the word meaning acquisition process to be presented covers all instances of learning words from context.

The hypothesized process leading to the goal of finding a stable word meaning consists of the following sequence. When learners recognize a word within a context as unknown, they *select* from the context concepts that constrain the meaning of the word. Then the learner *searches for* and *tests* meaning candidates within the context. Meaning candidates are defined as known concepts that seem to fit the constraints selected. Candidates are tested by matching the contextual constraints with the features of the candidate concept. A hypothesis about the word is then formed. The hypothesis may be vague, such as knowing the word describes something in a negative way, or as precise as a full definition, although obtaining a precise definition from one context is probably fairly unusual. If decision criteria are not reached, that is, if the hypothesis formed does not include a decision that the word is now known, the process continues with the next encounter of the word in context.

With a subsequent encounter, the learner again *selects* constraints and *searches for* and *tests* meaning candidates. But between the selection and the search is another step, that of *coordinating* the constraints of the present context and prior context(s). In such cases, the testing phase involves matching the multiple constraints derived from the contexts with the features of the candidate concept. In this way, information about the word's meaning is *compiled* and *refined* until the hypothesis formed about the word meets the decision criteria.

It should be noted that decision criteria are not easily defined. It is difficult to pinpoint when information gathered about a word allows for it to be considered known, as knowing a word is not an all-or-nothing proposition. In this study, decision criteria will be operationalized rather simply, as matching an unknown word with the correct meaning choice after being presented with context that disallows all other meaning choices.

The Meaning Acquisition Task

In this section, a description of the task and its relationship to the hypothesized meaning acquisition process is provided. The stimulus material from one of the six items developed for the task is used to exemplify the task. This item was developed around the artificial word *narp*, whose designated meaning was *ordinary*. The description begins with a brief overview of the task. First, a single context sentence containing a target word was presented, along with choices for the word's meaning. After the initial sentences and the choices were discussed, the task moved to the presentation of additional contexts whose role was to narrow the possible choices for the word's meaning. Eventually, the contexts provided enough information to allow the elimination of all but the designated meaning choice. After the word was linked to its definition, sentences were presented that required recognition of appropriate and inappropriate uses of the word. Each item in the task comprised five steps, which will now be described in detail.

Step 1. In the first step of the task, a context sentence containing an artificial word was read to the child and six choices for the word's meaning were presented, one at a time. The sentence for the artificial word *narp* was:

"Standing in front of it, we all agreed that it seemed like a *narp* house."

The choices presented were: *expensive*, *strange*, *brick*, *shy*, *ordinary*, and *soft*. Children were asked if each choice could be the meaning of the word and why or why not. The six choices were selected so that two of them could be rejected with reference to only that part of the context immediately around the word, or the "local context." Here, for example, the meaning choices *shy* and *soft* could be rejected because they are not features of a house; a house would not be described as being soft or shy. One

of the six choices fit at the local context level but not at the fuller, or more "global," context level. For the above sentence, *brick* would be a permissible feature of *house*, but would not fit the global context of people agreeing that, "It seemed like a brick house." The other three choices were permissible choices for the new word's meaning.

This first step represents two aspects of the view of the word meaning acquisition process described earlier. First, the justifications that the children gave for their choices provided evidence of the contextual information the children were using to select meaning constraints. Second, the children's evaluation of each choice as appropriate or inappropriate and their justification of choices reflected the testing of meaning candidates within the constraints chosen.

Step 2. In the second step of the task, two additional sentences containing the same artificial word as in Step 1 were presented together. The sentences presented for the *narp* item were:

1. "It was hard finding the right gift because everything in the store was so *narp*."

2. "When he's around older people, Henry acts *narp*."

The child was told to use information from both sentences to decide if each of the same six choices as presented in Step 1 fit the meaning of the word and why or why not. The first sentence presented allowed the same three choices as the sentence in Step 1, that is, for *narp*, the choices *expensive*, *strange*, and *ordinary*, and the other allowed two of those choices and one choice that was disallowed for the initial sentence, that is, *strange*, *ordinary*, and *shy*. Thus, the child was, ideally, able to reject two choices because they fit neither context, two because they fit only one context, and accept two choices as possible meanings. In the *narp* example, *brick* and *soft* fit neither context, *expensive* and *shy* fit only one of the two contexts, and *strange* and *ordinary* remain as possible meaning choices. This step reflects the coordination of two contexts to select constraints and the testing of candidates by matching the coordinated constraints with the candidate features, in the present view of the word meaning acquisition process.

Step 3. In Step 3, three sentences were presented based on one of the sentences shown earlier, but different detail had been added in each case. The three sentences for the *narp* item were:

1. "It looked like a *narp* house, right at the corner near the bus stop."

2. "It looked like a *narp* house and most people never thought much about it."

3. "It looked like a *narp* house, like all the others on the block."

After each sentence, the child was asked if it told any more about the meaning of the word, and if so, what. In this step, one sentence contained no additional information that distinguished the meaning choices – for the *narp* item, it was the bus stop sentence – while the other two gave clues that

allowed a final choice to be determined. This step reflects the view of the word meaning acquisition process in that it presents subsequent encounters with the word in which information about meaning is compiled and refined.

Step 4. At the end of Step 3, the child was asked what s/he thought the meaning of the word was. An additional sentence was presented only if the child was incorrect or still unsure of the meaning. The sentence for Step 4 consisted of a strong context that gave explicit clues to the meaning of the word. For the *narp* item, the sentence that was presented depicted normal, familiar events, giving the child optimal opportunity to recognize *ordinary* as the correct meaning:

"On every *narp* week day, the children went to school and their parents went to work."

The child was then asked if s/he knew anything more about the word's meaning. If still unsure, the child was told the correct meaning. Step 4 reflects the aspect of the word meaning acquisition process in which a decision is made as to a word's meaning.

Step 5. In Step 5, six sentences were presented and the child was asked, for each, if it was a "good" sentence, that is, true, or a "bad" sentence, because it was not true. This step was designed so that three sentences were good and three bad, regarding their use of the artificial word. For the *narp* item, the good sentences were:

1. "A *narp* clock has two hands."
2. "Eating lunch is a *narp* thing to do."
3. "It's *narp* to wear boots in winter weather."

The bad sentences were:

1. "People dress up and look *narp* on Halloween."
2. "Other people stay away from *narp* guys."
3. "Someone who has magic powers is *narp*."

This step corresponds to what can be described as the goal of the meaning acquisition process. That is, tests if the child, having reached decision criteria about the word (or having been told its meaning), can use the knowledge of the word's meaning to interpret the meaning of further sentence contexts.

Subjects and Design

The subjects in this study were 30 fifth graders from a small, urban school district in western Pennsylvania. Two groups, a high vocabulary ability and a low vocabulary ability group, were formed, with 15 children in each group. Criteria for the high and low groups were set after examining scores obtained by all the children at the end of their 4th-grade year on the vocabulary subtest of the Stanford Achievement Test (Madden, Gardner, Rudman, Karlsen, & Merwin, 1973). Children whose vocabulary scores fell in the middle of the distribution (this turned out to be grade

equivalent scores from 4.2 to 4.7) were eliminated from consideration as potential subjects.

The high ability group was formed with all fifth-grade children for whom scores could be obtained (i.e., excluding children who had entered the school in the present school year) who had achieved a grade level equivalent score of 4.8 or above. These scores represent high ability for this population of children, although scores beginning at this level would be considered average rather than high ability in terms of national norms. They do indicate an acceptable level of performance for this age level, however. The mean score of the high group was 5.8.

The low ability group was formed with all fifth-grade children for whom scores could be obtained who had achieved a grade level equivalent of 4.1 or below, and who had scored 3.3 or above on the reading subtest of the Stanford. This second criterion was added in an attempt to eliminate children whose ability was so low as to signal possible problems with understanding the task requirements. The mean score of the low group was 3.2.

The reading subtest scores for the Stanford Achievement Test were also calculated for each group. The high group's mean on the reading test was 5.8, the same as for the vocabulary test. The reading test mean of the low group was 4.4, considerably higher than their vocabulary test mean.

Procedure

The task was administered by the experimenter individually to each child. The items were presented on 3 x 5 cards and read aloud to the child. Responses were tape-recorded and later transcribed for scoring. Because pilot work indicated that the administration of the six items would take about an hour, raising the possibility of interfering with the child's school day as well as his/her ability to attend and respond consistently, the task was divided into two three-item sessions.

The items and choices within each item were presented in a fixed order. This decision was made because order effects did not seem a risk here, since items were not being compared with each other. The interest was individual differences, which might artificially vary more if order of items or choices varied.

Scoring

Seven scores, two each for Steps 1 and 2 and one each for Steps 3, 4, and 5, were obtained. The seven scores were summed across items. Reliability of the scoring system was determined by having a second judge score 20% of the data which consisted of the responses to all six items by three children from each group, selected randomly from within each group. The reliability, which was determined by the match between the two judges' evaluations of each response, was .95.

Step 1 was scored for the two aspects of meaning acquisition that it reflected, the selection of constraints and the testing of candidates within constraints. For *constraint selection*, each choice within each of the six items was worth 2 points, which were awarded if a child's reason for accepting or rejecting a choice was correct and sufficient. One point was awarded if a constraint was chosen that was correct, but not sufficient for evaluating the meaning choice. For example, given the choice *expensive* for the *narp* sentence, a child would receive 2 points for the response, "People might stand in front of a house and think it looks expensive." Such a response is correct and sufficient, because it reflects consideration of both local and global context levels. Only 1 point, however, would be given for the response, "A house can be expensive," since only the local context has been considered. Accepting the choice within the local context of "house" would not necessarily mean the choice would be acceptable in the sentence; the fit of the choice must be considered within the global context before a valid decision could be made.

The *testing of constraints* was worth 1 point for each choice within each item. The point was awarded if the child correctly evaluated, that is, accepted or rejected, the choice, given that some correct constraint, either local or global, had been selected. The reason for this prerequisite was that if the child evaluated the choice without using contextual constraints, the evaluation would not constitute testing of constraints.

Step 2 was scored for coordination of two contexts and for testing of candidates within the coordinated constraints. For *coordination of contexts*, each choice within each item was worth 1 point, which was earned if the child referred to both sentences in justifying the evaluation of a choice. For *testing within coordinated constraints*, each choice within each item was worth 1 point, which was earned if the child correctly evaluated the choice, given that both sentences were used in the justification.

Step 3 was scored for the *use of additional contexts to refine word meaning*. One point was scored for each of the three sentences within each item if the child could correctly explain why the sentence did or did not give further clues to the word's meaning.

Step 4 was worth 2 points per item, which were awarded if the child could correctly *identify the meaning* of the word at the end of Step 3. One point was awarded if the child was only able to identify the meaning after the additional sentence was presented.

Step 5 was worth 1 point for each sentence within each item. A point was awarded if the child could correctly *evaluate a sentence that used the newly "acquired" word* as good or bad and could correctly explain why the word did or did not make sense in the context.

RESULTS

The seven scores obtained from the meaning acquisition task each represented an aspect of the meaning acquisition process. These aspects were (a) selection of constraints from context, (b) testing a meaning choice within constraints, (c) use of two contexts to constrain meaning choices, (d) evaluation of a meaning choice given the use of two contexts, (e) use of additional contexts to refine word meaning, (f) identification of word meaning given contexts that contain direct meaning clues, and (g) discrimination of sentences that use or misuse the newly learned words. The data for the high and low groups on each of the seven scores obtained were analyzed by *t* tests.

Prior to collecting data, it was decided that, in addition to the comparisons made on the seven aspects of meaning acquisition, some more fine-grained qualitative comparisons of response types would also be made. The rationale for seeking these more fine-grained comparisons was that such an examination could be quite revealing in regard to how children of high and low skill handle information in meaning acquisition situations. The specific comparisons to be made were not established a priori but, rather, were directed by patterns that arose within the data.

A problem with more fine-grained comparisons is that they involve reduced sample size. This was particularly true for the high group, since most comparisons were of error types, and the high group had fewer errors. The result was an exaggerated variability for some comparisons. Relatedly, the small *n* and the nonindependent nature of responses being categorized made many types of statistical analysis inappropriate. Thus, comprehensive analyses were not performed on these comparisons. In three selected cases, however, *t* tests were used to assess comparisons that seemed of particular interest. Only those three comparisons are discussed here.

Despite the problems associated with qualitative comparisons, such an examination seems worthwhile, since some of the patterns revealed are quite compelling in what they suggest about how children of varying skill approach the task of acquiring word meaning from context.

The results presented are organized around the seven aspects of the word meaning acquisition process represented by the seven scores obtained from the task. The fine-grained comparisons are discussed within these aspects.

1. *Selection of constraints from context*. The score for selection of constraints depended on the children's use of contextual information to justify their acceptance or rejection of the meaning choices in the initial sentence presented in the task. High ability children were significantly better able to select available constraints, $t = 4.47$, $p = .001$. This result is presented in the first two rows of Table 1.

When children justified their meaning choices in some way other than using the available contextual constraints, their responses were considered incorrect justifications. Types of incorrect justifications were examined as a fine-grained comparison. Two types of incorrect justifications were prominent in children's responses. They were labeled as nonuse of context and misuse of context.

Nonuse responses were responses that either gave no information about what evidence children had used to evaluate the meaning choice, or concerned orthographic or phonological features of the words with no semantic information. An example of a nonuse response that gave no evi-

Table 1 Comparisons of the Two Groups on Seven Aspects of the Meaning Acquisition Process

Aspect	Group	Mean (%)	Standard deviation	Degrees of freedom
Constraint selection	High	78.4	9.267	
	Low	61.9	10.837	28
Constraint testing	High	91.8	5.181	
	Low	85.5	6.647	28
Use of two contexts	High	53.6	18.071	
	Low	32.2	20.969	28
Evaluation/two contexts	High	78.7	11.437	
	Low	69.1	27.227	18.79[a]
Additional contexts	High	54.2	13.724	
	Low	39.8	14.764	28
Meaning identification	High	81.6	13.023	
	Low	69.4	12.452	28
Sentence discrimination	High	86.6	13.763	
	Low	62.8	21.941	28

[a]Separate variances used to estimate error, which results in partial degrees of freedom.
[b]Difference in means is significant, $p < .05$.
[c]Difference in means is significant, $p < .01$.

dence occurred when, asked why the word being considered could or could not have a certain meaning, the child either merely read the sentence, substituting the choice for the target word, responded with "It just fits/doesn't fit," or said "I don't know." An example of a nonuse response based on phonological features would be rejecting *brick* as a possible meaning for *narp* because "narp sounds pretty different from brick."

Misuse of context justifications occurred either when the child combined contextual information with outside information to create a "scenario" in which to evaluate a meaning choice, or when the child inferred unnecessary constraints that prematurely restricted possible meaning choices. Thus, in both types of misuse responses, the child was developing constraints that did not exist within the context. For example, consider a scenario which occurred in response to the choice *lose*, for the artificial word *bafe* in the sentence, "The doctor told her to *bafe* her glasses." A child rejected the choice, saying "The doctor told her if she lose her glasses, she couldn't get no more." Another scenario example occurred in response to the choice, *strange*, for *narp* in the sentence, "Standing in front of it, we all agreed that it seemed like a *narp* house." Here, the child accepted *strange* as a possible meaning, saying "I think they're looking at it so hard, if you look at something, things will start to get blurry and look like they're moving." Thus, scenarios represented a kind of free association between the context and meaning choice rather than a consideration of the choice's appropriateness to the context.

An example of a response that restricts the possible meaning of the word occurred in response to the choice, *wear*, for *bafe* in the sentence, "The doctor told her to *bafe* her glasses." A child rejected *wear* as a possible meaning for *bafe* "cause he told her to remove them." (*remove* was a meaning choice that had been presented previously). In cases of restricted response, children prematurely narrowed their pool of choices and rejected choices that did fit the context.

Table 2 presents a breakdown by category for each group's incorrect justification responses. These results represent 14 subjects per group, since one subject in each group had no incorrect justifications. The means presented in all tables are unweighted means.

As can be seen from the table, the pattern of responses differed between the two groups. For the high ability group, the nonuse of context category accounted for a greater percentage (65.9%) of errors than did the misuse category (21.5%). However, for the low ability group, the misuse category accounted for a more nearly equal percentage of errors as the nonuse category (37.4 vs. 43.8).

To assess differences in the two groups' errors here, a *t* test was used to compare the percentage of misuse responses between the groups. This category was tested because it seemed to shed light on errors that can occur in assigning meaning to context.

Table 2 Mean Percent Incorrect Justifications in Each Category for Constraint Selection

	Category		
	Nonuse of context	Misuse of context	Other
Group			
High (70)	65.9 (52)	21.5 (13)	12.3 (5)
Low (119)	43.8 (53)	37.4 (43)	18.8 (23)

Note. Frequencies are in parentheses.

Despite the apparent discrepancy in the means for the high and low groups (21.5 vs. 37.4), the difference was not significant, $t = 1.51$, $p = .143$. A strong contributor to this result was likely due to one subject whose only incorrect justification was a single response that fell into the misuse category. Thus, this subject received 100% of his errors in this category, while all other children in the group exhibited 50% or less of their errors in this category. Thus, there does appear to be at least a trend toward differences between high and low ability groups in the types of errors made in constraint selection.

2. *Testing a word choice within constraints.* Given that a child selected either partial or sufficient constraints from the context, s/he could then score a point if the word choice was evaluated appropriately for the constraints selected. For example, consider the choice *brick* for *narp* in the sentence, "Standing in front of it, we all agreed that it seemed like a *narp* house." If the child had identified both local and global constraints, a point was scored for testing if the child rejected *brick*, since it does not fit the constraints. However, if a child had identified only the local constraint of what a house can be, a testing point was scored if s/he accepted *brick*, since it fits the constraint identified.

The high ability group did significantly better in evaluating meaning choices within constraints, $t = 2.88$, $p = .008$. This result is shown in the second two rows of Table 1. Thus, even when constraints were correctly identified, the low ability group was at a disadvantage in evaluating meaning choices as fitting those constraints.

3. *Use of two contexts to constrain meaning choices.* A score was given for use of two contexts if, when two sentences were presented simultaneously, a child considered both sentences in order to evaluate a meaning choice. Note that here only the use of two contexts is at issue, and not whether the eventual response was correct.

The comparison of the two groups on the use of two contexts showed a significant difference in favor of the high ability group, $t = 2.99$, $p = .006$. This result is shown in the third two rows of Table 1. Thus, when presented with two contexts, the high ability children were more likely to consider both of them in evaluating a meaning choice.

4. *Evaluation of a meaning choice given use of two contexts.* When a child used both sentences in considering a meaning choice, another aspect of multiple context use came into play, that of whether s/he correctly evaluated the choice. Differences between the high and low ability groups on this aspect were not significant, $t = 1.26$, $p = .223$. As can be noted from the fourth two rows of Table 1, the variances for the two groups for this aspect were discrepant. The variances were significantly different, $p = .003$, which necessitated the use of separate variance estimates to calculate the t statistic. The large variance for the low ability group was likely due to 4 subjects who used both contexts for evaluating choices in 5 or fewer of the 36 occasions to do so, and either used them all accurately or all inaccurately. This resulted in scores of 0 or 100%, which were discrepant from the rest of the group.

An additional characteristic of this aspect of the word meaning acquisition process is that, psychologically, it involves two parts. The first is judging the choices' appropriateness for each sentence, and the second is reaching an overall decision about the choice. For those choices in each item that could be rejected from both sentences or accepted in both sentences, a separate step of reaching an overall decision was not meaningful. For example, if a choice was rejected in both sentences, a decision to reject the choice as the meaning for the target word would be automatic. In contrast, when the choice was accepted in one sentence and rejected in the other, those conflicting decisions must be resolved with one final decision. (Of course, only rejection of the choice can be correct, but, nevertheless, a conflict is present due to differential evaluation of the sentences.) Since the situation in which the appropriate response to reject in one sentence and accept in the other (reject/accept) required an extra processing step, the responses for those situations were compared to situations in which it was appropriate to reject the response in both sentences (reject/reject) or accept it in both sentences (accept/accept).

Table 3 shows the correct evaluation responses of each group broken down to reflect these three situations. These results represent all subjects for the reject/reject cases, all high ability subjects and 13 low ability subjects for the accept/accept cases, and 14 subjects per group for the reject/accept cases. As can be seen from the table, the reject/accept cases stand out in two ways. First, the proportion of correct responses is much lower here than for the reject/reject and accept/accept cases, for both groups. Second, there is an apparent difference between the groups for the reject/

Table 3 Mean Percent Correct Evaluation in Reject/Reject Accept/Accept and Reject/Accept Cases (Step 2)

	Category		
	Reject reject	Accept accept	Reject accept
Group			
High	95.7	79.0	26.4
(218)	(120)	(73)	(25)
Low	89.3	71.5	8.3
(111)	(58)	(48)	(5)

Note. Frequencies are in parentheses.

accept cases. The difference for reject/accept cases was assessed by a t test and found to be significant, $t = 2.05$, $p = .050$.

Because of the two steps involved in evaluating reject/accept cases, a question arises as to what proportion of errors can be attributed to failing to correctly evaluate the choice in each sentence and what proportion is due to failure to resolve the reject/accept conflict, that is, wrongly accepting the choice even though it had been rejected for one of the sentences. Table 4 presents these results. Fourteen subjects from each group are presented. As can be seen from the table, the greater proportion of errors, for both groups, is due to incorrect evaluation of one or both sentences rather than failing to correctly resolve the conflict. These data indicate that the extra processing step required in these cases does not completely account for the lower rate of overall correct evaluation. The greater proportion of errors is made in failing to reach a differential decision for the two sentences.

Table 4 Mean Percent Errors in Evaluation of Two Contexts due to Sentence Evaluation and Overall Decision (Step 2)

	Reason for error	
	Incorrect evaluation of sentence(s)	Incorrect overall decision
Group		
High	72.6	27.3
(48)	(30)	(18)
Low	77.3	22.7
(44)	(32)	(12)

Note. Frequencies are in parentheses.

5. *Use of additional contexts to refine word meaning.* To test children's ability to refine their notions of a word's meaning upon further encounters with the new word, three sentences were presented. One offered no further clues to word meaning, and two did help to further differentiate among the choices. Differences in the ability to obtain correct word meaning information from these additional contexts were found to be significant between the two groups, $t = 2.77$, $p = .010$. This result is shown in the fifth two rows of Table 1.

6. *Identification of word meaning given direct meaning clues.* If the three sentences presented to help children narrow their meaning choices were interpreted correctly, only the correct meaning choice remained for the target word. Next, children were asked to identify the meaning of the target word. If they were unable to do so correctly, an additional sentence was presented which gave direct clues to the word's meaning. If the meaning could not be identified, the child was told the word's meaning.

The high and low ability groups were shown to differ significantly in their ability to identify correct meaning, $t = 2.62$, $p = .014$. This result is shown in the second to last two rows of Table 1.

7. *Discrimination of sentences that use or misuse newly learned words.* After having received several contexts containing a target word, and having produced or been told the word's correct meaning, children were asked to judge sentences that contained the new word as "good" or "bad," that is, true or not true regarding the use of the word. Here, children were to consider the assigned meaning of the target word within the sentence, to develop a sentence interpretation, and then to test the validity of that interpretation.

High ability children were significantly more able to meet the requirements of this task, $t = 3.56$, $p = .001$. This result is shown in the last two rows of Table 1. The difference in the variances for the two groups for this aspect might be considered as approaching significance, $p = .092$. Here the pooled variance estimate was used to calculate the tabled values. However, the t value calculated from separate variance estimates also shows a significant difference between the groups, $t = 3.56$, $p = .002$.

The errors that children made in discriminating appropriate and inappropriate uses of the target words were examined, and three types of errors were identified. They involved context-driven responses, which were derived only from the surrounding context with no consideration of the target word's assigned meaning; limited concept responses, which failed to use the interdependence of word and context to interpret sentence meaning; and misinterpretation responses, which contained an inaccurate interpretation of the sentence as a whole.

In *context-driven responses*, children did not consider the assigned meaning of the target word to derive an interpretation of the sentence.

Rather, either the target word was ignored and the interpretation based solely on the surrounding context, or some other word that had a strong association to the context was substituted for the target word.

Examples of context-driven responses that ignored the word are evaluating the sentence, "People dress up and look *narp* (ordinary) on Halloween" as good "cause people do dress up on Halloween," or evaluating the sentence, "People who are very happy feel *depero* (stubborn)" as good because "people who are happy smile at everyone, say good morning." In such cases, children either simply confirmed or rejected the validity of the surrounding context, or formed some association to it. This seemed to indicate that children did not allow for a separate meaning of the target word within the context.

Examples of context-driven responses in which substitutions were made include judging the *Halloween* sentence given above as good, saying, "It could mean scary," or responding to the *happy* sentence with, "I don't know of anything to go with it, maybe excited or something." Here children allowed for a separate meaning for the word, but that meaning was not semantically independent in that the context of the sentence governed the meaning that the children ascribed to the word.

In *limited concept responses*, children used the assigned meaning of the target word but failed to use the interdependence of word and context to develop a sentence interpretation. That is, children were unable to extend their concept of the word meaning to fit the context. An example of this includes evaluating the sentence, "If you sign a *linbad* (agreement) it's like making a promise" as bad, because "a promise and a agreement's two different things."

In *misinterpretation responses*, children gave consideration to the assigned word meaning within the context, but arrived at an inaccurate evaluation or interpretation of the sentence. In some instances of misinterpretation, children disagreed with a good sentence, such as "Sometimes you can end a fight by making a *linbad* (agreement)" because "when they fight, they fight, they not supposed to make an agreement when they fight." In other instances, children misinterpreted a sentence by distorting it in some way, such as evaluating the sentence, "The owner of a movie theater would be happy to see a big *renby* (crowd) come in" as bad, because "a crowd coming in a movie theater would be disturbing everybody."

Table 5 shows the percentage of each group's errors in Step 5 attributed to the response types described. These data represent 12 of the 15 subjects in the high group and all of the low group. The percent and frequencies of error types may seem discrepant, especially for the high group. This is because responses of 2 subjects in the high group were disparate with the set of scores for the group. These 2 subjects were responsible for 77% of the errors in the context-driven category, while they made almost no other errors.

Table 5 Mean Percent Errors in Each Category for Sentence Discrimination (Step 5)

	Category			
	Context-driven	Limited concept	Misinterpretation	Other
Group				
High (63)	29.2 (34)	22.5 (8)	40.0 (17)	8.3 (4)
Low (191)	45.9 (112)	21.0 (21)	17.5 (35)	15.8 (23)

Note. Frequencies are in parentheses.

In the low group, also, 2 subjects evidenced scores in the context-driven category that were somewhat disparate with the rest of the group, although the disparity was not so great as in the high ability group. These 2 subjects in the low group were responsible for 42% of the errors in that category.

Table 5 shows a very different pattern of errors between the two groups for the context-driven and misinterpretation categories. The context-driven errors are particularly interesting because they may yield insights about difficulties children encounter with the integration of word and context to construct meaning. In order to analyze these data so as not to give undue weight to the highly discrepant scores, a trimming procedure was used. In this procedure, recommended by Winer (1971) for handling extreme observations, equal numbers (in this case, two) of the highest and lowest scores are removed from the sample, and the resulting reduced, or trimmed, sample is treated as the sample data. The means for the trimmed sample were 21.6 for the high group and 44.1 for the low group. The difference was assessed by a t test and found to be significant, $t = 2.29$, $p = .035$.

DISCUSSION

Learning vocabulary through inferring the meaning of new words from context has long been a prevalent and highly recommended technique for vocabulary development. However, research has shown that gaining word meaning from context is far from an automatic process, and particularly that less skilled students are much less likely to succeed in gaining meaning (Quealy, 1969; Rankin & Overholser, 1969). The present study proposed specific aspects of the process of acquiring word meaning from context in order to investigate where within the process differences between children with high and low vocabulary ability occur.

Three notions about the process of acquiring word meaning from context can be derived from the results of this study. These notions are, first, that the low ability group evidenced a misunderstanding of the relationship between word and context; second, that the low ability group, and to a lesser extent the high ability group as well, demonstrated a semantic interference when considering two contexts simultaneously; and, third, that the performance of both groups indicated the complexity of the meaning acquisition process.

Misunderstanding of the Relationship Between Word and Context

The poorer performance of the low ability group in the selection of contextual constraints and in the use of newly learned words, as well as the nature of their errors within these two aspects, seems to indicate a misunderstanding of the relationship between a word and the surrounding context. The understanding of this relationship comprises an awareness that concepts in context represent limits that constrain but do not determine word meaning. To succeed in deriving word meaning, a learner must stay within these limits, but realize that a range of meanings for the target word may be allowed. Using these limits implies a recognition of the type of information that is appropriate to the task of deriving meaning, for numerous associations can be made to a given context, but not all will be supported by the context.

Several excerpts from children's protocols serve to illustrate this notion of contextual limits and the differential understanding of the limits shown

by the high and low ability groups. Consider a response given by a high ability child about the choice *luck* for the word *renby* in the sentence, "Tony wanted to join the noisy *renby*." "No [it doesn't mean luck]; you can be noisy when you get luck, but luck isn't noisy." Here the child has brought in an outside association between *noisy* and *luck*, yet she is able to distinguish that association from the information that constrains the meaning choice. Contrast this response with the following response of a low group child for *smile* on the same sentence: "Yes [it could mean smile]; when he want to join something he could smile and be all happy." Here an association between the choice, *smile*, and the context is established and used to evaluate the fit of the choice, even though it goes beyond the meaning supported by the context.

Next consider a response from a high group child to the choice *scared* for the word *depero* in the sentence, "The worried rider couldn't control the *depero* horse": "It might mean scared, cause somebody could have shot a bullet or something, made it scared, and he couldn't control it." This child reasons by bringing in an outside event in the form of an example of something that could scare a horse and cause him to become uncontrollable. The example she develops helps her to understand the relationship between *scared* and *controlling a horse*, and obeys the limits set by the context. In contrast, consider the following response from a low group child about the choice *size* for the word *linbad* in the sentence, "After working on the problem the group was ready to make a *linbad*": "Yes; they probably buy a dress and didn't know what to do, so they probably figured out their problems and found a size." It seems that here, too, the child is attempting to develop a relationship between a part of the context (working on a problem) and the meaning choice (size). But he ends up with a scenario that is not supported by the context; in fact, it does not even hang together as a plausible event sequence. As these examples demonstrate, working within contextual limits enables one to extract accurate information about potential word meaning from context.

Semantic Interference in Considering Two Contexts

When considering two contexts for evaluating word meaning choices, both groups were very accurate in reject/reject cases, somewhat less accurate in accept/accept cases, and showed much poorer performance in reject/accept cases. Although this pattern held for both groups, the high ability group was found to be more successful in reject/accept cases.

When two sentences were used, the most common response was to reject the choice in both sentences. This was true to the extent that not only were most reject/reject cases correctly evaluated, but rejecting the choice in both sentences was most often the response when accept/accept and reject/accept cases were incorrectly evaluated. A possible explanation of this tendency is the notion of a semantic interference between the two contexts.

That is, the meaning obtained from one context is carried over to the other and interferes with an accurate evaluation of the second context. Consider first the accept/accept cases. The tendency to reject the choice in both sentences here may stem from difficulty in fitting a word to two contexts that reflect somewhat different senses of the word. For example, items for sale in a store are *ordinary* in a somewhat different way than a person is *ordinary*; boys and girls *growing* up is different from *growing* corn; an *agreement* made between two children differs from an *agreement* that a President makes. When considered together, the two contexts may interfere with each other, and because a choice may not seem to fit each context in the "right," that is, the same way, it may be rejected. This notion is a speculation, and the only support that can be offered is that children seemed able to make correct judgments in selecting constraints in Step 1, when a single sentence was presented, about the same choices that were incorrectly rejected in Step 2, when two contexts were given.

In cases in which the correct response was to reject a choice in one sentence and accept it in the other, interference may occur in that a context from which a choice can be easily rejected carries over a reject bias to the second context. For example, the two sentences presented for the *depero* item were, "The woman at the desk was too *depero* to move," and "The zookeeper tried to get the baby lion into the cage, but the lion was too *depero*." The choice, *fast*, can readily be rejected from the sentence about the woman, because of the impossibility of being "too fast to move." This implication of inaction, then, may carry over to the *lion* sentence, and *fast* is rejected there as well. In support of this notion, it is noted that when children consider both sentences here, the choice is rejected in both sentences in 14 of 18 cases. However, when children attend only to the *lion* sentence, *fast* is correctly accepted in five of the six cases. This pattern of rejecting a choice when a sentence is considered in conjunction with the other sentence, while accepting the choice for the sentence when it is considered alone, appears several times in the data.

The evidence of semantic interference suggests that multiple contexts may impair the ability of low ability learners to derive information from context regarding word meaning, at least if they are left to do so on their own. This issue may also contain a developmental aspect, because of the involvement of the high ability group in the pattern of poorer performance in reject/accept cases. Perhaps, then, it requires a certain amount of semantic sophistication beyond the level of children in this study to take advantage of two contexts, particularly when they require different conclusions about the appropriateness of a meaning choice.

Complexity of the Task of Meaning Acquisition

Certain of the findings of this study serve to underscore the notion that acquiring word meaning from context is a complex process in which a se-

ries of processing steps must contribute to achieve a successful outcome. What this complexity means operationally is that, even under conditions that seem nearly optimal, successful outcomes may not be forthcoming. Specifically, such circumstances arose in three places within the findings of this study.

The first is the finding that low ability children were less able to correctly test a meaning choice within constraints they had identified from context. In cases of incorrect constraint testing, children succeeded in identifying a part of the context that did constrain meaning, but then failed to use it in evaluating their choices. For example, a child rejected *guess* for the sentence, "After working on the problem, the group was ready to make a *linbad*," saying "they had a problem, and they tried to guess what's the matter. They wouldn't be able to see what's the matter." Here the child correctly relates making a guess to the constraint of trying to solve a problem, but ultimately rejects it, seeming to imply that guessing would not be a good way to solve the problem. In her final evaluation, then, she doesn't use the relationship she established between working on a problem and guessing. Thus, even under what would appear to be optimal conditions, that is, the correct identification of constraints and the availability of meaning choices, successful testing of a choice within constraints does not automatically occur, at least for children of lower ability.

Another indication of task complexity occurred in the identification of word meaning after the presentation of contexts that eliminated all but the correct meaning choice. The low ability group was less successful at identifying the correct word meaning than was the high group. This speaks to the issue of complexity because in this study several contexts for each word, developed with very deliberate clues, including direct clues to word meaning, were presented consecutively to each child individually. Yet, even within this very structured environment, differences were found between high and low ability groups.

A third indication of the complexity of the meaning acquisition process was that a simple operationalization of learning a word, that is, either deriving a correct definition from context or being told the definition, did not, for the low ability group, translate into ability to use the newly learned word to interpret subsequent sentences that immediately followed the learning task. This suggests that low ability children are not only at a disadvantage in deriving word meaning, but, once word meaning is provided, they remain at a disadvantage in applying the new word.

Instructional Implications

The characterizations of processing discussed in this chapter carry implications both for instruction in the use of context to derive word meaning and for direct instruction of vocabulary. First, three aspects of the process

of acquiring word meaning from context were the most directly implicated in the differences between effective and less effective use of context. These three aspects, selecting constraints from context, taking advantage of multiple contexts, and using new words following initial learning, might be considered as possible topics for instruction in using context. However, the findings of this study indicate that the presentation of effective instruction in these areas is not straightforward, since success within these aspects did not always yield an overall successful outcome. For example, for the low group especially, selecting appropriate constraints did not always lead to getting correct information about word meaning, and the use of two contexts did not guarantee obtaining accurate information, particularly when a choice should have been rejected in one and accepted in another context.

The way the development of the ability to use context is usually addressed is to provide children with a wide variety of contexts that may contain unfamiliar words, with perhaps some general direction that one should look within and around the target sentence for clues to word meaning (e.g., Durr, 1976). Less frequently, specific types of clues, such as cause and effect, synonym, and so forth, may be directly introduced. However, the findings of this study suggest that it is not enough to teach children where constraints are located in contexts or the various forms constraints may take or to reflect on multiple contexts when available. What needs to be learned is more elusive, such as to what extent outside information can be brought to bear without violating the limits of the context, and the amount of flexibility allowed in assigning meaning to concepts within the context. These notions are difficult to capture in a prescribed set of instructions or rules. To create such instruction, one would need to circumscribe the precise knowledge that needs to be brought to bear, and how far from strict, denotative interpretations of known words and contextual situations one should venture in order to assign meaning to a particular word.

Work of other researchers supports the notion of the problematic nature of deriving word meaning from context and the difficulty of overcoming these problems through instruction. Sternberg and Powell (1983) set forth a theory of learning from context that hypothesizes that the likelihood of learning word meaning from context depends not only on information available in the context but also on factors such as weeding out irrelevant information, integration of information gleaned into a coherent word meaning, and usefulness of prior knowledge. These factors are labeled *mediating variables*. In some preliminary results, Sternberg and Davidson (1983) showed that although teaching students to use context clues did improve performance, mediating variables played a substantial role in the success of the instruction.

Carnine et al. (1984), in reviewing factors contributing to successful use of context for acquiring word meaning, cite the importance of a reader's

past experience in using context – which sets up a kind of "chicken/egg" problem. Carnine et al. then instructed students in the use of context clues. Although instructed students were able to use context more effectively, the authors concluded that a more potent instructional strategy was called for to teach context skills to an acceptable level.

Based on the nature of the task of acquiring word meaning from context, as demonstrated by the present study and by other researchers, it seems that the technique of teacher modeling would be well suited to improve children's context skills. A teacher could communicate important concepts of acquiring word meaning from context by demonstrating the use of context to derive contextual constraints, test candidates, compile information about the word's meaning, and eventually interpret subsequent contexts. The use of such a strategy could lead children to follow the successful model and avoid the problems shown to characterize a less effective meaning acquisition process.

The suggestion to use teacher modeling for developing context skill parallels a discussion by Carnine et al. (1984) about the kind of instruction that is adequate for teaching various cognitive skills. The authors assert that while certain conceptually easy skills can be taught through techniques such as systematic practice, other, more complex, skills require the use of "systematic modeling and questioning" (p. 201). Carnine and his colleagues have shown the effectiveness of incorporating modeling into the instruction of various comprehension skills, such as critical reading (Patching, Kameenui, Carnine, Gersten, & Colvin, 1983), study skills (Adams, Carnine, & Gersten, 1982), and text-based inferences (Carnine, Kameenui, & Woolfson, 1982).

The use of teacher modeling for the instruction of complex skills is also advocated by Collins and Smith (1982). They recommend the techniques as a first step in developing comprehension monitoring ability, describing it as a "kind of 'slow motion' film of the way comprehending takes place in a sophisticated reader" (p. 175).

The following example illustrates how a teacher could present a context containing an unknown word and work through it toward deriving the meaning of the word.

> "The worried rider couldn't control the *depero* horse." Let's see, *depero* must mean something that a horse could be. A horse could be *well-trained*, but, no, a rider shouldn't have any trouble controlling a well-trained horse, so it wouldn't mean well-trained. It has to be something that would make a horse hard to control. Maybe *scared*, a horse could be scared, and because he was scared, he might act up and be hard to control. Or it could be *stubborn*, because horses sometimes do get stubborn, and when they do it's hard for a rider to get them to do what she wants.

With subsequent contexts, the teacher could show how additional information might eliminate or confirm certain meaning choices. After exposure to

teacher modeling, the children could begin to think aloud the information they infer from contexts and receive teacher feedback. Exposure to successful models and interactive practice in deriving information from contexts could give children the opportunity to develop a sense of how to use context to take advantage of the information it offers without bringing to bear information that is irrelevant or causes interference.

Modeling also seems an effective technique for helping students to resolve difficulties caused by contexts that reflect different shades of meaning for a word. Consider, for example, the following two sentences containing the word *ordinary*: (a) "There was nothing unusual about the day, it seemed as ordinary as any other"; (b) "Sandra didn't care for ordinary people." In the first sentence, *ordinary* is in complete harmony with the rest of the context – a day that is not unusual. However, in the second sentence, *ordinary* is less expected, yet the context is still plausible. Here, *ordinary* can be inferred to take on the sense of "*too* usual" or "unexciting," but the meaning of *ordinary* does not change to more closely coincide with some meaning that could be expected from the context, such as "bad" or "unkind." Findings of this study suggest that the knowledge of how to use *ordinary* to interpret these contexts may not be easily obtained through mere exposure to them. But, with the use of a modeling strategy, the task of interpreting contexts such as these could be demonstrated explicitly.

The suggestion for the use of a modeling strategy can be extended to direct instruction in vocabulary. Providing models of interpreting contexts containing new words that are being learned could help children to understand that word meanings have both stable and flexible elements and to develop ways to apply words in new contexts and test their appropriateness. This type of knowledge about word meanings may lessen the problems demonstrated in this study in the use of new words following a learning experience that involved only a correct definition. The implication is that having a correct definition, or exposure to multiple contexts, is not enough – at least for low ability children – to allow a word to become a useful part of one's vocabulary repertoire. Indeed, such limited experience may not be sufficient for high ability children either. Although high ability children were more successful in using the newly learned words in this study, only a very limited concept of word use was tested, and it was done immediately following learning.

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Footnotes

In addition to these two response types, which accounted for over 80% of the incorrect justifications in each groups, an *other* category was necessary. This category consisted both of responses that could be categorized, but whose categories contained four or fewer responses over both groups, and of responses from which no interpretation of the child's justification could be made.

A category of "other" responses was also necessary, and contained responses such as "I don't know," and those that were difficult to interpret or unique. One such example was the response to the sentence, "It's *rare* (ordinary) to wear boots in winter weather." "No, it's just the weather, and you don't wear boots if it's just the weather."

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